Cheng, G. 113

Comite, A. 11

Di Cave, S. 223

Coello Oviedo, M.D. 139

Delhoménie, M.-C. 211

Chemical Engineering Journal 94 (2003) 255

# Chemical Engineering Journal

www.elsevier.com/locate/cej

Shi, Z. 171

Zhu, Y. 161

Singh, K.K. 79

# Author Index of Volume 94

Lei, P. 155 Adrover, A. 127 Di Felice, R. 11 Al-Duri, B. 199 Dolors Balaguer, M. 231 Li, Z. 121 Anthony, E.J. 147 Domenech, S. 41 Lin, H. 179 Dutta, N.N. 1 Liping, D. 155 Artola, A. 231 Assaf, E.M. 93 Liu, C. 121 Fang, M. 171 Assaf, J.M. 93 López-Ramírez, J.A. 139 Luo, Z. 171 Azzaro-Pantel, C. 41 Garcia-Valls, R. 99 Ge, S. 121 Mammarella, E.J. 73 Bandyopadhyay, D. 79 Gendron, J. 211 Mariani, N.J. 107 Bardin-Monnier, N. 241 Giona, M. 127 Martin, M.J. 231 Barreto, G.F. 107 Giudici, R. 189 Bibeau, L. 211 Mazza, G.D. 107 Goswami, P. 1 Mazzarotta, B. 223 Biscans, B. 41 Gourdon, C. 241 Meng, F. 113 Borgna, A. 19 Guiraud, P. 241 Borio, D.O. 29 Montastruc, L. 41 Guozhu, M. 155 Monzón, A. 19 Bottino, A. 11 Bravi, M. 223 Han, B. 161 Bressa, S.P. 107 Palma, M. 189 Han, M. 179 Pedernera, M.N. 29 Brzezinski, R. 211 Hatton, T.A. 99 Bucalá, V. 29 Piña, J. 29 Hazarika, S. 1 Heitz, M. 211 Quiroga Alonso, J.Ma. 139 Cabassud, M. 41 Capannelli, G. 11 Inel, O. 57 Cen, K. 171 Rai, S. 67 Cerbelli, S. 127 Rigola, M. 231

Inel, O. 57

Jesus, L.C. 93

Jia, L. 147

Jianping, W. 155

Jin, Y. 179

Rai, S. 67

Rigola, M. 23

Robert Otto, S

Romeo, E. 19

Rubiolo, A.C.

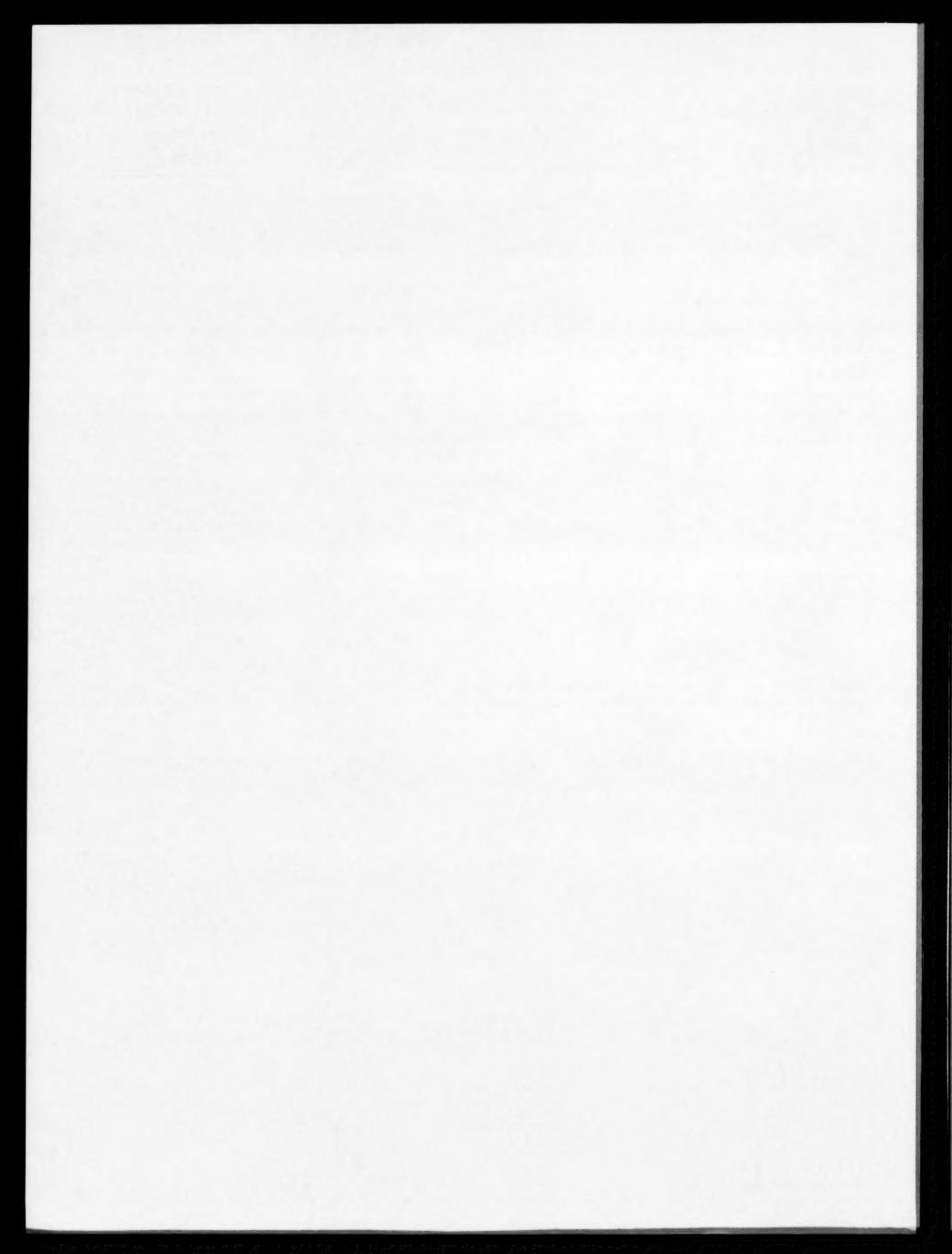
Keegan, S.D. 107

Keegan, S.D. 107

Sales Márquez

Sanyal, D. 79

Singh, K.N. 79 Singh, S.D. 79 Sridhar, S. 51 Srinivasan, T. 51 Storace, S. 11 Tao, X. 113 Tümsek, F. 57 Velardo, A. 127 Verdone, N. 223 Verma, A.K. 67 Virendra, U. 51 Wang, D. 179 Wang, J. 147 Wang, Q. 171 Wickramasinghe, S.R. 161 Wu, Q. 161 Yang, B. 113 Yang, X. 199 Yao, R. 113 Robert Otto, S. 199 Yu, C. 171 Romeo, E. 19 Yuan, Y. 179 Rubiolo, A.C. 73 Zhang, S. 121 Sales Márquez, D. 139





Chemical Engineering Journal 94 (2003) 257-260

Chemical Engineering Journal

# Subject Index of Volume 94

A type molecular sieve

Evaluation of the thermodynamic parameters for the adsorption of some n-alkanes on A type zeolite crystals by inverse gas chromatography, 57

Abrasion

Closed-form solution of abrasion and abrasion-dissolution kinetic models, 127

Acetamide

Pervaporation of ketazine aqueous layer in production of hydrazine hydrate by peroxide process, 51

Activated sludge

Evolution of an activated sludge system under starvation conditions, 139 Activity coefficient

A thermochemical approach for calcium phosphate precipitation modeling in a pellet reactor, 41

Activity microbial

Evolution of an activated sludge system under starvation conditions, 139

Concentration-dependent surface diffusivity model (CDSDM): numerical development and application, 199

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Adsorption thermodynamic parameters

Evaluation of the thermodynamic parameters for the adsorption of some n-alkanes on A type zeolite crystals by inverse gas chromatography, 57

Air treatment

A study of clogging in a biofilter treating toluene vapors, 211

Alginate-carrageenan gel

Crosslinking kinetics of cation-hydrocolloid gels, 73

Attrition behaviour

Relating the attrition behaviour of crystals in a stirred vessel to their mechanical properties, 223

**Axial dispersion** 

Analysis of axial dispersion in an oscillatory-flow continuous reactor, 189

Residence time distribution of droplets within discs and doughnuts pulsed extraction columns via Lagrangian experiments and simulations, 241

**Back-extraction** 

Comparison of mixed trialkyl phosphine oxides (TRPO) extractants from different sources, 161

2-o-Benzylglycerol

Lipase catalysed transesterification of 2-o-benzylglycerol with vinyl acetate: solvent effect, 1

Bio-denitrification

The denitrification treatment of low C/N ratio nitrate-nitrogen wastewater in a gas-liquid-solid fluidized bed bioreactor, 155

Biofilm

A study of clogging in a biofilter treating toluene vapors, 211 Biofiltration

A study of clogging in a biofilter treating toluene vapors, 211 Bubble column

Studies on surface to bulk ionic mass transfer in bubble column, 67

Butane

Effect of carbon dioxide on the reaction performance of oxidative dehydrogenation of *n*-butane over V-Mg-O catalyst, 121

Calcium phosphate

A thermochemical approach for calcium phosphate precipitation modeling in a pellet reactor, 41

Carbon

A study on dissolution kinetics of carbon in liquid iron bath, 79 Carbon adsorbent

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Carbon dioxide

Effect of carbon dioxide on the reaction performance of oxidative dehydrogenation of *n*-butane over V-Mg-O catalyst, 121

Catalyst activity distributions

Use of a heterogeneous two-dimensional model to improve the primary steam reformer performance, 29

Catalytic distillation

Pressure drop for two phase counter-current flow in a packed column with a novel internal, 179

Catalytic reactor

Kinetic investigations on the oxidehydrogenation of propane over vanadium supported on γ-Al<sub>2</sub>O<sub>3</sub>, 11

Catalytic reforming

Relationship between the kinetic parameters of different catalyst deactivation models, 19

CFL

Residence time distribution of droplets within discs and doughnuts pulsed extraction columns via Lagrangian experiments and simulations, 241

Chitosan membrane

Pervaporation of ketazine aqueous layer in production of hydrazine hydrate by peroxide process, 51

Clogging

A study of clogging in a biofilter treating toluene vapors, 211

Coal gasification

Experimental research on solid circulation in a twin fluidized bed system, 171

Complex reaction

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution,

Complexation

Metal ion complexation with lignin derivatives, 99

Concentration-dependent surface diffusivity model

Concentration-dependent surface diffusivity model (CDSDM): numerical development and application, 199

Counter-current flow

Pressure drop for two phase counter-current flow in a packed column with a novel internal, 179

Cross flow

Pressure drop for two phase counter-current flow in a packed column with a novel internal, 179

## Crystallisation

Relating the attrition behaviour of crystals in a stirred vessel to their mechanical properties, 223

### Deactivation kinetic models

Relationship between the kinetic parameters of different catalyst deactivation models, 19

### Dehydration

Pervaporation of ketazine aqueous layer in production of hydrazine hydrate by peroxide process, 51

### Diffusion-reaction

Approximation of the effectiveness factor in catalytic pellets, 107 Dissolution

A study on dissolution kinetics of carbon in liquid iron bath, 79 Closed-form solution of abrasion and abrasion-dissolution kinetic models, 127

### Effectiveness factor

Approximation of the effectiveness factor in catalytic pellets, 107 Electrochemical process

Studies on surface to bulk ionic mass transfer in bubble column, 67

# Ethyl tert-amyl ether

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution, 113

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution, 113

### Extraction

Comparison of mixed trialkyl phosphine oxides (TRPO) extractants from different sources, 161

### **Extraction column**

Residence time distribution of droplets within discs and doughnuts pulsed extraction columns via Lagrangian experiments and simulations, 241

# Ferro-ferricyanide system

Studies on surface to bulk ionic mass transfer in bubble column, 67 Finite difference

Concentration-dependent surface diffusivity model (CDSDM): numerical development and application, 199

## Flue gas

Reactivation of fluidised bed combustor ash for sulphur capture, 147 Fluidised bed combustion

Reactivation of fluidised bed combustor ash for sulphur capture, 147 Fouling

Relationship between the kinetic parameters of different catalyst deactivation models, 19

## Gas-liquid contactor

Studies on surface to bulk ionic mass transfer in bubble column, 67 Gas-liquid-solid three-phase fluidized bed bioreactor

The denitrification treatment of low C/N ratio nitrate-nitrogen wastewater in a gas-liquid-solid fluidized bed bioreactor, 155

### Gelling mechanism

Crosslinking kinetics of cation-hydrocolloid gels, 73

# Genetic algorithm

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution, 113

### Hardness

Relating the attrition behaviour of crystals in a stirred vessel to their mechanical properties, 223

### Heat of adsorption

Evaluation of the thermodynamic parameters for the adsorption of some *n*-alkanes on A type zeolite crystals by inverse gas chromatography, 57

### Hydrazine hydrate

Pervaporation of ketazine aqueous layer in production of hydrazine hydrate by peroxide process, 51

### Impregnation process

The active phase distribution in Ni/Al<sub>2</sub>O<sub>3</sub> catalysts and mathematical modeling of the impregnation process, 93

#### Internal

Pressure drop for two phase counter-current flow in a packed column with a novel internal, 179

### Inverse gas chromatography

Evaluation of the thermodynamic parameters for the adsorption of some *n*-alkanes on A type zeolite crystals by inverse gas chromatography, 57

### Ketazine

Pervaporation of ketazine aqueous layer in production of hydrazine hydrate by peroxide process, 51

### Kinetic

Kinetic investigations on the oxidehydrogenation of propane over vanadium supported on γ-Al<sub>2</sub>O<sub>3</sub>, 11

A study on dissolution kinetics of carbon in liquid iron bath, 79

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution, 113

Concentration-dependent surface diffusivity model (CDSDM): numerical development and application, 199

### Lagrangian tracking

Residence time distribution of droplets within discs and doughnuts pulsed extraction columns via Lagrangian experiments and simulations, 241

### Lignin

Metal ion complexation with lignin derivatives, 99

### Limestone sorbent

Reactivation of fluidised bed combustor ash for sulphur capture, 147 Lipase

Lipase catalysed transesterification of 2-o-benzylglycerol with vinyl acetate: solvent effect, 1

### Loading capacity

Comparison of mixed trialkyl phosphine oxides (TRPO) extractants from different sources, 161

### Magnesium ortho-vanadate

Effect of carbon dioxide on the reaction performance of oxidative dehydrogenation of *n*-butane over V-Mg-O catalyst, 121

### Mass transfer

Studies on surface to bulk ionic mass transfer in bubble column, 67 Concentration-dependent surface diffusivity model (CDSDM): numerical development and application, 199

### Mathematical model

Experimental research on solid circulation in a twin fluidized bed system, 171

# Mathematical modeling

The active phase distribution in Ni/Al<sub>2</sub>O<sub>3</sub> catalysts and mathematical modeling of the impregnation process, 93

### Metal ions

Metal ion complexation with lignin derivatives, 99

### Methyl-cyclohexane dehydrogenation

Relationship between the kinetic parameters of different catalyst deactivation models, 19

### Model

Crosslinking kinetics of cation-hydrocolloid gels, 73

Pressure drop for two phase counter-current flow in a packed column with a novel internal, 179

# Modeling

Use of a heterogeneous two-dimensional model to improve the primary steam reformer performance, 29

Ni/Al<sub>2</sub>O<sub>3</sub> catalysts

The active phase distribution in Ni/Al<sub>2</sub>O<sub>3</sub> catalysts and mathematical modeling of the impregnation process, 93

Nickel concentration profiles

The active phase distribution in Ni/Al<sub>2</sub>O<sub>3</sub> catalysts and mathematical modeling of the impregnation process, 93

Nitrate-nitrogen

The denitrification treatment of low C/N ratio nitrate-nitrogen wastewater in a gas-liquid-solid fluidized bed bioreactor, 155

Numerical solution

Concentration-dependent surface diffusivity model (CDSDM): numerical development and application, 199

Nutrient control

A study of clogging in a biofilter treating toluene vapors, 211

One-dimensional model

Approximation of the effectiveness factor in catalytic pellets, 107

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution, 113

Oscillatory-flow reactor

Analysis of axial dispersion in an oscillatory-flow continuous reactor, 189

Oxidative dehydrogenation

Effect of carbon dioxide on the reaction performance of oxidative dehydrogenation of *n*-butane over V-Mg-O catalyst, 121

Parameter estimation

Relationship between the kinetic parameters of different catalyst deactivation models, 19

Pellet reactor

A thermochemical approach for calcium phosphate precipitation modeling in a pellet reactor, 41

Pervaporation

Pervaporation of ketazine aqueous layer in production of hydrazine hydrate by peroxide process, 51

 $pH_{ZPC}$ 

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Population balances

Closed-form solution of abrasion and abrasion-dissolution kinetic models, 127

Pore structure

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Precipitation

A thermochemical approach for calcium phosphate precipitation modeling in a pellet reactor, 41

Pressure drop

Pressure drop for two phase counter-current flow in a packed column with a novel internal, 179

A study of clogging in a biofilter treating toluene vapors, 211

Propane oxidehydrogenation

Kinetic investigations on the oxidehydrogenation of propane over vanadium supported on γ-Al<sub>2</sub>O<sub>3</sub>, 11

Pseudomonas cepacia

Lipase catalysed transesterification of 2-o-benzylglycerol with vinyl acetate: solvent effect, 1

Pt/Al<sub>2</sub>O<sub>3</sub>

Relationship between the kinetic parameters of different catalyst deactivation models, 19

Pulsed flow

Residence time distribution of droplets within discs and doughnuts pulsed extraction columns via Lagrangian experiments and simulations, 241

**Pyrolysis** 

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Reactivation

Reactivation of fluidised bed combustor ash for sulphur capture, 147 Redox mechanism

Kinetic investigations on the oxidehydrogenation of propane over vanadium supported on γ-Al<sub>2</sub>O<sub>3</sub>, 11

Reduction biomass

Evolution of an activated sludge system under starvation conditions, 139 Residual activity

Relationship between the kinetic parameters of different catalyst deactivation models, 19

Sewage sludge

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Side-group

Comparison of mixed trialkyl phosphine oxides (TRPO) extractants from different sources, 161

Simulated annealing

Kinetics research for the synthesis of branch ether using geneticsimulated annealing algorithm with multi-pattern evolution, 113

Single-phase flow
Analysis of axial dispersion in an oscillatory-flow continuous reactor, 189

Smelting-reduction

A study on dissolution kinetics of carbon in liquid iron bath, 79

Experimental research on solid circulation in a twin fluidized bed system, 171

Sparging

Studies on surface to bulk ionic mass transfer in bubble column, 67 Starvation

Evolution of an activated sludge system under starvation conditions, 139 Steam reforming

Use of a heterogeneous two-dimensional model to improve the primary steam reformer performance, 29

Sulphur capture

Reactivation of fluidised bed combustor ash for sulphur capture, 147 Surface charge

Activated carbons developed from surplus sewage sludge for the removal of dyes from dilute aqueous solutions, 231

Titration calorimetry

Metal ion complexation with lignin derivatives, 99

Toluene

A study of clogging in a biofilter treating toluene vapors, 211 TRPO

Comparison of mixed trialkyl phosphine oxides (TRPO) extractants from different sources, 161

Twin fluidized beds

Experimental research on solid circulation in a twin fluidized bed system, 171

Two-dimensional heterogeneous model

Use of a heterogeneous two-dimensional model to improve the primary steam reformer performance, 29

Two-phase flow

Residence time distribution of droplets within discs and doughnuts pulsed extraction columns via Lagrangian experiments and simulations, 241

Variable deactivation order

Relationship between the kinetic parameters of different catalyst deac-

Vinyl acetate

Lipase catalysed transesterification of 2-o-benzylglycerol with vinyl acetate: solvent effect, 1

# Wastewater

The denitrification treatment of low C/N ratio nitrate-nitrogen wastewater in a gas-liquid-solid fluidized bed bioreactor, 155

# Wastewater treatment

A thermochemical approach for calcium phosphate precipitation modeling in a pellet reactor, 41